

DOCKET: STR 20100

PATENT

Reissue of U.S. Patent No. 5,015,544, issued May 14, 1991

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR:	Burroughs et al.)	EXAMINER:	K. Wieder
)		
SERIAL NO.:	963,915)	ART UNIT:	2607
)		
FILING DATE:	October 20, 1992)	DATE:	January 11, 1994
)		
FOR:	BATTERY WITH)		
	STRENGTH INDICATOR)		

SECOND SUPPLEMENTAL REISSUE DECLARATION

Honorable Commissioner of
Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

Applicants James R. Burroughs, residing at 4697 White Oak Avenue, Encino, California 91316, and Alan N. O'Kain, residing at 718 Malabar Drive, Corona del Mar, California 92625, both citizens of the United States of America, declare that:

1. We previously submitted declarations in connection with the above referenced reissue application of our '544 patent, including our Reissue Declaration and Power of Attorney executed by us on October 13, 1992, and our Supplemental Reissue Declaration executed by us on May 7, 1993 and May 10, 1993. We hereby incorporate herein our statements in those declarations.

2. We believe that we are the original, first and joint inventors of the subject matter described and claimed in our '544 patent granted on May 14, 1991 and in the specification and claims of this reissue application as filed on October 20, 1992, and in the claim amendments as filed on May 11, 1993 and September 27, 1993.

3. We do not know and do not believe that the invention was ever known or used in the United States before our invention thereof.

4. We hereby state that we have received and understand the contents of the specification and claims of this reissue application as filed on October 20, 1992, and of the claim amendments as filed on May 11, 1993 and September 27, 1993.

5. We acknowledge our duty to disclose information which is material to the examination of this application in accordance with §1.56(a) of Title 37, Code of Federal Regulations.

6. We believe our original '544 patent to be partly or wholly inoperative because of error, without deceptive intent on the part of the applicants, by reason of claiming less than we had a right to claim in the patent. We believe that certain features of original claims 1-11, as more fully explained below, are not essential for practicing the broad inventive concept of our '544 patent and that new claims 12-63, as amended, correct the error of our '544 patent by claiming the invention in scope corresponding to the broad disclosure of our invention in the '544 patent. Specifically, claims 1-11 as issued in our patent are limited to a battery having a battery strength indicator and switch means in which the battery indicator means is defined as a first chamber having indicator means therein formed between top and base nonconductive layers, the switch means is defined as a deformable second chamber formed between the top and base layers, and including first, second and third conductive means.

7. We initially became concerned that we may have erred by claiming less than we had a right to claim in our '544 patent after becoming aware in late 1991 of U.S. Patent No. 5,059,895 issued October 22, 1991 to Cataldi et al., and more fully appreciated this error in 1992 after engaging in licensing negotiations with major battery manufacturers and being made aware of an Eveready Battery Company's European patent application directed to a similar invention published in July of 1992 and the application for reissue of the Cataldi et al. patent filed in September of 1992. We believe the errors which rendered our '544 patent partly or wholly inoperative, as

set forth in our original reissue application filed October 20, 1992 and in the claim amendments filed on May 11, 1993 and September 27, 1993, arose from inadvertence, accident or mistake, without deceptive intent, because of our failure to communicate more clearly to our previous attorneys, who prepared, filed and prosecuted our application, the broad scope of our invention of a battery with strength indicator so as to have our invention claimed as broadly as it was disclosed in our '544 patent specification and drawings and as broadly as we intended to have it claimed in the patent; we believe that error also arose because of our inadequate understanding of the limited scope of the claims, since we are not familiar with patent law, as set forth in paragraph 15 of our reissue declaration dated October 13, 1992.

8. With respect to the claim amendments filed on May 11, 1993, and specifically new claim 51 therein, we became concerned after October 13, 1992, the date of our original reissue declaration, and upon further review of our reissue application, that our battery strength or voltage indicator as previously broadly conceived by us and disclosed in our '544 patent was not claimed in its broadest aspect and did not require the specific recitation in the claims of a battery strength indicator and switch means in which the battery indicator means is defined as a first chamber having indicator means therein formed between top and base nonconductive layers, the switch means is defined as a deformable second chamber formed between the top and base layers, and including first, second and third conductive means, nor did it require the recitation of coupling means as recited in reissue claim 50 or thermal insulating or insulation means as recited in reissue claims 33-40 and 43-49. After consultation with our present attorney, Peter Peterson, and discussion with him concerning the breadth of disclosure of our invention, we explained to Mr. Peterson that our broad invention as disclosed in the '544 patent required only the recitation of means to transfer sufficient heat generated by the conductive layer to the temperature

sensitive color indicator material to change the color thereof and indicate voltage when the voltage indicator is in contact with a battery housing. We then added claim 51 to protect this aspect of our invention, which is broader than original claims 1-11 because it does not recite the specific construction of the battery indicator means as comprising indicating means in a first chamber between top and base nonconductive layers, switch means as comprising a deformable second chamber formed between top and base nonconductive layers, and spaced apart conductive means within the switch chamber which may be brought into contact by pressing the chamber. After the Office Action dated July 19, 1993, we also became aware of minor spelling errors of the words "in" and "indicator" in claim 51, which we corrected in the Amendment filed September 27, 1993.

9. With respect to new claims 52 and 53 of the Amendment filed on May 11, 1993, we became concerned after review of U.S. Patent No. 5,059,895, issued October 22, 1991 to Cataldi et al., that our battery strength or voltage indicator as disclosed in our '544 patent was not claimed in its broadest aspect and did not require the recitation of the specific construction of the battery indicator means as comprising a first chamber formed between top and base nonconductive layers and indicator means disposed therein, as recited in our original patent claims 1-11. After consultation with Mr. Peterson and discussion with him concerning our broad disclosure of our invention, we explained to Mr. Peterson that our invention as disclosed in the '544 patent required only recitation of a battery strength indicator formed in a layer attached to the side of a battery which undergoes a visible change when subjected to a predetermined voltage output of the battery and a battery switch biased in an open position comprising a resilient, nonconductive layer on a side of the battery with a switch chamber disposed beneath the resilient layer, with the strength indicator and switch chamber being electrically connected with each other and the

battery terminals. After further consultation with Mr. Peterson in late 1992, we also explained to him that this aspect of our invention may specifically be applied in connection with a rechargeable dry cell battery or rechargeable batteries mounted on a package frame, as now set forth in claims 52 and 53, respectively. We then added claims 52 and 53 to protect these aspects of our invention, which are broader than original claims 1-11 because they do not recite the specific construction of the battery indicator means as comprising indicating means in a first chamber between top and base nonconductive layers. After the Office Action dated July 19, 1993, we also became aware of minor spelling errors of the words "biased" and "indicate" in claim 52, which we corrected in the Amendment filed September 27, 1993.

10. With respect to the Amendment filed September 27, 1993 containing amendments to claims 13-15, 30-32, 41 and 42, we became concerned after issuance of the Office Action dated July 19, 1993 that our invention as embodied in these claims, while being commensurate with our broad conception and disclosure of our invention in the '544 patent in not requiring a battery strength indicator defined as a first chamber having indicator means therein formed between top and base nonconductive layers, switch means defined as a deformable second chamber formed between the top and base layers, and including first, second and third conductive means, did require recitation that the claimed voltage indicator is attached to the side of a battery, and that there is further incorporated on the side of the battery an electrical switch which may be activated to place the conductive layer across the terminals of the battery to indicate the voltage of the battery. After consultation with Mr. Peterson, we then instructed him to amend these claims to reflect our invention as disclosed in the '544 patent, which claims are narrower than as-filed in this reissue patent because of the inclusion of the battery and switch, but still broader than original claims 1-11 because they do not recite the specific construction of the battery indicator

means as comprising indicating means in a first chamber between top and base nonconductive layers, switch means as comprising a deformable second chamber formed between top and base nonconductive layers, and spaced apart conductive means within the switch chamber which may be brought into contact by pressing the chamber.

11. With respect to the Amendment filed September 27, 1993 containing amendments to claims 16-24, 26 and 27, we became concerned after issuance of the Office Action dated July 19, 1993, and further during our interview with Examiner Wieder on September 9, 1993, that the broadest expression of our invention as embodied in these claims did not require the recitation of the term "nonconducting" or "to prevent conduction" in connection with the recited means under the conductive layer to permit the heat generated by the conductive layer to change the color of the temperature sensitive color indicator layer and indicate voltage when the voltage indicator is in contact with a battery housing. After consultation with Mr. Peterson, we then instructed him to amend these claims, which are broader than original claims 1-11 because they do not recite the specific construction of the battery indicator means as comprising indicating means in a first chamber between top and base nonconductive layers, switch means as comprising a deformable second chamber formed between top and base nonconductive layers, and spaced apart conductive means within the switch chamber which may be brought into contact by pressing the chamber.

12. With respect to the Amendment filed September 27, 1993 containing new claims 54-63, we became concerned after issuance of the Office Action dated July 19, 1993 that our invention, as embodied in independent claims 12 and 52 (which did not specify a particular type of battery strength indicator attached to the side of the battery), further did not require the recitation of the specific construction of the battery

indicator means as comprising a first chamber formed between top and base nonconductive layers and indicator means disposed therein, as recited in our original patent claims 1-11. After consultation with Mr. Peterson, we explained to him that our invention as disclosed in our '544 patent allowed for claiming the strength indicator structures of the various embodiments of our invention as described in our '544 patent according to the following types of claims, which we requested Mr. Peterson to add to our reissue application:

a) With regard to new dependent claims 54 and 59, the structure of the battery strength indicator was broader than that set forth in the original claims 1-11 and required only a dielectric layer, a conductive layer above or below the dielectric layer, and a temperature sensitive color indicator layer in thermal contact, with the conductive layer having sufficient heat generating capacity and means to transfer sufficient heat generated by the color indicator layer to change the color of the indicator layer. This battery strength indicator structure is broader than that set forth in claims 1-11 in that it does not require the indicating means to be disposed in a first chamber between nonconductive top and base layers.

b) With regard to new dependent claims 55 and 60, the structure of the battery strength indicator was broader than that set forth in the original claims 1-11 and required only a chemical redox composition which changes color when the voltage potential across the terminals of the battery crosses a pre-determined voltage. This battery strength indicator structure is broader than that set forth in claims 1-11 in that it does not require the indicating means to be disposed in a first chamber between nonconductive top and base layers.

c) With regard to new dependent claims 56 and 61, the structure of the battery strength indicator was broader than that set forth in the original

claims 1-11 and required only a liquid crystal composition that changes phases when the voltage potential across the terminals of the battery crosses a pre-determined voltage. This battery strength indicator structure is broader than that set forth in claims 1-11 in that it does not require the indicating means to be disposed in a first chamber between nonconductive top and base layers.

d) With regard to new dependent claims 57 and 62, the structure of the battery strength indicator was broader than that set forth in the original claims 1-11 and required only a conductive layer which has a reduced cross-sectional area in contact with a heat sensitive color indicator layer adapted to undergo a color change when the temperature of the reduced cross-sectional area of the conductive layer rises to a pre-determined temperature when the voltage potential across the terminals of the battery crosses a pre-determined voltage. This battery strength indicator structure is broader than that set forth in claims 1-11 in that it does not require the indicating means to be disposed in a first chamber between nonconductive top and base layers.

e) With regard to new dependent claims 58 and 63, the structure of the battery strength indicator was broader than that set forth in the original claims 1-11 and required only a light emitting diode that undergoes a visible change when the voltage potential across the terminals of the battery crosses a pre-determined voltage. This battery strength indicator structure is broader than that set forth in claims 1-11 in that it does not require the indicating means to be disposed in a first chamber between nonconductive top and base layers.

13. We believe that the aforementioned amendments to claims 13-24, 26, 27, 30-32, 41 and 42 and new claims 51-63 correct the error of our '544 patent as to being wholly or partially inoperative or claiming less than we had a right to claim since these claims now define our invention in broader scope, but still within the bounds of


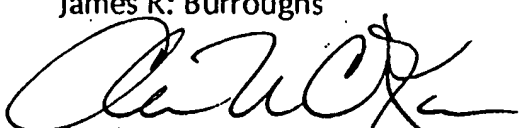
our original disclosure, by variously eliminating the requirements of the specific battery indicator means construction and specific switch means construction as described in original claims 1-11 of our '544 patent.

14. The undersigned applicants declare further that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under §1001 of Title 18 of United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Wherefore, we hereby subscribe our names to the foregoing second supplemental reissue declaration.

12-30-93
Date

12-29-93
Date


James R. Burroughs

Alan N. O'Kain